Google™ Web Images Groups News Froogle Local more »

calculating compute determine find parallel prc Search Advanced Search Preferences

Web Results **1** - **10** of about **20,700** for **calculating compute determine find parallel processing speed effic**

Beowulf-HOWTO Linux Howto Linux: Linux Help, Linux Operating ...
If you need **speed** - either due to a **compute** bound problem and/or an I/O bound problem, ... Proceedings, International **Parallel Processing** Symposium, ...
www.alllinuxinfo.com/howto/show/Beowulf-HOWTO.html - 59k - Cached - Similar pages

Beowulf HOWTO
If you need **speed** - either due to a **compute** bound problem and/or an I/O bound problem, ... Proceedings, International Conference on **Parallel Processing**, ...
www.faqs.org/docs/Linux-HOWTO/Beowulf-HOWTO.html - 54k - Cached - Similar pages

Introduction to **Parallel** Programming
Serial Problem Description; **Parallel** Solution. **Calculating** Array Elements ...
Processing speed dependent on how fast data can move through hardware ...
www.hku.hk/cc/sp2/workshop/ html/**parallel**-intro/ParallelIntro.html - 71k - Cached - Similar pages

Fixed Time Performance
Our argument was, and is, that **parallel processing** allows us to tackle ...
The asymptotic **speed** is sometimes called r . **Efficiency** can be defined as the ...
www.scl.ameslab.gov/Publications/ Gus/FixedTime/FixedTime.html - 61k - Jun 13, 2005 - Cached - Similar pages

[PDF] The Consequences of Fixed Time Performance Measurement*
File Format: PDF/Adobe Acrobat - View as HTML
efficiency independent of **processor speed** and ensemble size; it sometimes ...
To reproduce the **parallel** search pattern on the **serial** computer involves extra ...
www.scl.ameslab.gov/Publications/ Gus/FixedTime/FixedTime.pdf - Similar pages
[More results from www.scl.ameslab.gov]

Video/Imaging DesignLine | Sorting data in two clock cycles
In addition to **efficiency**, **parallelism** was an important factor in enhancing ...
Parallel processing constructs might also be reused in the same way that ...
www.videsignline.com/showArticle. jhtml?printableArticle=true&articleId=59301383 - Similar pages

Video/Imaging DesignLine | Sorting data in two clock cycles
Analog eLab: Utilizing High-**Speed** ADCs for Undersampling • Applying Lean Principles to the New Product Development **Process** ...
www.videsignline.com/howto/59301383 - Similar pages

Chapter 1 : Overview of **Parallel** Computing
1.3, Speedup, **efficiency**. We want to use **parallelism** to **compute** answers more ...
The **serial** machine would have to execute all the **parallel processes**. ...
www.iit.edu/~tc/overview.html - 47k - Cached - Similar pages

Chapter 3: Classic **Parallel** Algortihms
In the example above, we saw how **parallel processing** enabled us to ... Design and implement a **parallel** program which will **compute** the dotproduct of two ...
www.andrew.cmu.edu/user/ky0h/CS-Lab/log-algorithms.html - 18k - Cached - Similar pages

Embedded.com - Sorting data in two clock cycles

These **processes** directly **compute** the desired information from stored image data;
... **Parallel** sorting will **speed** up the application, but it would need more ...
www.embedded.com/showArticle.jhtml?articleID=59100057 - 97k - Cached - Similar pages

Web Images Groups News Froogle Local more »

Speedup versus Efficiency in Parallel Systems Search Advanced Search Preferences

Web Results **1** - **10** of about **45,500** for **Speedup versus Efficiency in Parallel Systems**. (**0.08** seconds)

Speedup Versus Efficiency in Parallel Systems
Speedup Versus Efficiency in **Parallel Systems**. Full text, Full text available on the Publisher site Publisher Site. Source, IEEE Transactions on Computers ...
portal.acm.org/citation.cfm?id=63375 - Similar pages

Speedup versus efficiency in parallel systems
Speedup versus efficiency in **parallel systems**. Source, Multiprocessor performance measurement and evaluation table of contents. Pages: 76 - 91 ...
portal.acm.org/ citation.cfm?coll=GUIDE&dl=GUIDE&id=201958 - Similar pages
[More results from portal.acm.org]

Welcome to IEEE Xplore 2.0: Speedup versus efficiency in parallel ...
Speedup versus efficiency in **parallel systems**. Eager, DL Zahorjan, J. Lazowska, ED Dept. of Comput. Sci., Saskatchewan Univ., Saskatoon, Sask.; ...
ieeexplore.ieee.org/xpls/abs_ all.jsp?isnumber=861&arnumber=21127 - Similar pages

Welcome to IEEE Xplore 2.0: Speedup versus efficiency in parallel ...
Speedup versus efficiency in **parallel systems** ... average parallelism **efficiency parallel systems** software **system speedup**. Author Keywords Not Available ...
ieeexplore.ieee.org/xpls/absprintf.jsp?arnumber=21127 - Similar pages

[PDF] Speedup versus efficiency in parallel systems - Computers, IEEE ...
File Format: PDF/Adobe Acrobat
et al.:. **SPEEDUP VERSUS EFFICIENCY** IN. **PARALLEL**. **SYSTEMS**. 413. **speedup**, or whether a poor choice of scheduling discipline. and/or an inappropriate number of ...
dx.doi.org/10.1109/12.21127 - Similar pages

References
Speedup versus efficiency in **parallel systems**. IEEE Transactions on Computers, 38(3):408-423, March 1989. 9: D. Feitelson and B. Nitzberg. ...
bbcr.uwaterloo.ca/~brecht/ papers/html/perf96/node16.html - 12k - Cached - Similar pages

[PDF] The Efficiency of Parallel Processing
File Format: PDF/Adobe Acrobat - View as HTML
coupled **system** on a single application, we. use a model of **parallel** ... that part that can be processed in **parallel**. How does **speedup** vary with a? In par- ...
library.lanl.gov/cgi-bin/getfile?00326993.pdf - Similar pages

Paper: Parallel Benchmark on Multiprocessor and Multicomputer ...
SGI Origin 2800 is a SMP CC-NUMA **system** and one of the best **parallel** ...
The cluster can gain a better linear **speedup** and **efficiency** on the jobs with a lot ...
computing.breinestorm.net/ **systems**+system+**parallel**+smp+memory/ - 30k - Cached - Similar pages

[PDF] Supercomputer Architectures Clusters Versus Engineered MPPs
File Format: PDF/Adobe Acrobat - View as HTML
number of processors to the full computer **system** size - Scaled. **Speedup**. ...
parallel efficiency of the **system** and not the performance of. individual CPUs. ...
www.eif.ch/sos/sos2002/Talks/JimTomkins.pdf - Similar pages

Job Scheduling in Multiprogrammed **Parallel Systems** - Feitelson ...
118 **Speedup versus efficiency** in **parallel systems** (context) - Eager, Zahorjan et al.
- 1989 ACM DBLP 113 First-class user-level threads - Marsh, ...
citeseer.ist.psu.edu/257061.html - 74k - Cached - Similar pages

Goooooooooogle ▶
Result Page: 1 2 3 4 5 6 7 8 9 10 **Next**

Free! Google Desktop Search: Search your own computer. Download now.

Find: emails - files - chats - web history - media - PDF

Speedup versus Efficiency in Paralle Search

Search within results | Language Tools | Search Tips | Dissatisfied? Help us improve

Google Home - Advertising Programs - Business Solutions - About Google

16 citations found. Retrieving documents...

John L. Gustarson. *The consequences of fixed time performance measurement*. In Proceedings of the 25th Hawaii International Conference on System Sciences: Volume III, pages 113 124, 1992.

CiteSeer Home/Search Document Not in Database Summary Related Articles Check

This paper is cited in the following contexts:

Isoefficiency Function: A Sealability Metric for Parallel.. - Ananth Grama Anshul (Correct)

.... **of a parallel computer for a given algorithm What is the best algorithm and architecture for solving a problem as the problem size and number of processors change A number of performance evaluation metrics have been developed to study the scalability of parallel algorithms and architectures [3, 4, 10, 11, 12].** Kumar and Gupta [7] provide a compre hensive survey of different methods of scalability analysis. **The** isoefficiency function is one such metric. **It** relates the size of the problem being solved to the number of processors required to maintain the efficiency at a fixed value. **An** important feature ....

John L. Gustarson. *The consequences of fixed time performance measurement*. In Proceedings of the 25th Hawaii International Conference on System Sciences: Volume III, pages 113 124, 1992.

Modeling the Effects of Contention on Application Performance in .. - Figueira (1997) (5 citations) (Correct)

.... **6] Legion [24] Globus [23] Prophet [51] MARS [22] Condor [10] SmartNet [27] and Nile [34, 35] In general, current scheduling systems assign tasks (or entire applications) to machines according to computation time and communication costs using several different performance measures (e.g. [25, 31]) but few consider contention effects.** Among metacomputing application developers, Mechoso et al. 37] have identified contention effects, which they express as an expansion factor on their experiments with NGCM (Network General Circulation Model) Their analysis shows that contention does affect ....

J. L. Gustafson, "*The Consequences of Fixed Time Performance Measurement*, " in Proceedings of the Twenty-Fifth Hawaii International Conference on System Sciences, Vol. III, pp. 113-124, January 1992

Modeling the Effects of Contention on Application Performance in .. - Figueira (1997) (5 citations) (Correct)

.... **6] Legion [24] Globus [23] Prophet [51] MARS [22] Condor [10] SmartNet [27] and Nile [34, 35] In general, current scheduling systems assign tasks (or entire applications) to machines according to computation time and communication costs using several different performance measures (e.g. [25, 31]) but few consider contention effects.** Among metacomputing application developers, Mechoso et al. 37] have identified contention effects, which they express as an expansion factor on their experiments with NGCM (Network General Circulation Model) Their analysis shows that contention does affect ....

J. L. Gustafson, "*The Consequences of Fixed Time Performance Measurement*, " in Proceedings of the Twenty-Fifth Hawaii International Conference on System Sciences, Vol. III, pp. 113-124, January 1992

Analysis and Design of Scalable Parallel Algorithms for Scientific .. - Gupta (1995) (2 citations) (Correct)

....problem to 13 increase at the rate necessary to maintain a fixed efficiency, then the parallel system should be considered unscalable from a practical point of view. 2. **3 Relationship between Isoefficiency and Other Metrics A number of scalability metrics have been proposed by various researchers [22, 34, 36, 55, 61, 59, 60, 75, 80, 98, 108, 131, 130, 132, 137, 142, 146, 149].** We present a detailed survey of these metrics in [84] After reviewing these various measures of scalability, one may ask whether there exists one measure that is better than all others [66] The answer to this question is no, as different measures are suitable for different situations. **One** ....

John L. Gustafson. *The consequences of fixed time performance measurement*. In Proceedings of the 25th Hawaii International Conference on System Sciences: Volume III, pages 113–124, 1992.

Analyzing Scalability of Parallel Algorithms and Architectures - Kumar, Gupta (1994) (34 citations) (Correct)

....is half as fast. From these results, it is inferred that it is better to have a parallel computer with fewer faster processors than one with many slower processors. We discuss this issue further in Section 7 and show that this inference is valid only for a certain class of parallel systems. **In [49, 21], Sun and Gustafson argue that traditional speedup is an unfair measure, as it favors slow processors and poorly coded programs.** They derive some fair performance measures for parallel programs to correct this. The authors define sizeup as the ratio of the size of the problem solved on the ....

....serial operation is same but M 1 executes the parallelizable operations faster than M 2 . They show that M 1 will attain poorer speedups (even if the communication overheads are ignored) but according to sizeup, M 1 will be considered better. **Based on the concept of fixed time sizeup, Gustafson [21] has developed the SLALOM benchmark for a distortion free comparison of computers of widely varying speeds.** Sun and Rover [51] define a scalability metric called the isospeed measure, which is the factor by which the problem size has to be increased so that the average unit speed of computation ....

John L. Gustafson. *The consequences of fixed time performance measurement*. In Proceedings of the 25th Hawaii International Conference on System Sciences: Volume III, pages 113–124, 1992.

Parallel Best-First Branch-and-Bound in Discrete.. - Correa, Ferreira (1995) (3 citations) (Correct)

.... **This phenomenon is also one of the explanations for speedup anomalies (see section 4) Gustafson cites the parallel B B as a counterexample to the affirmation that the best sequential algorithm defines the least work necessary , which he considers as a myth of performance measurement [21].** The definition of e (p) considers this myth as a fact to measure the computational parallel efficiency of parallel B B algorithms. In the following, we shall define parallel efficiency measures which take into account the two factors involved in the efficiency of parallel synchronous B B ....

J. Gustafson. *The consequences of fixed time performance measurement*. In 25th Hawaii Int. Conf. on Syst. Sc., volume III. IEEE, Jan. 1992.

The Performance and Scalability of Parallel Systems - Davies (1994) (Correct)

.... **to performance measures such as efficiency [36, 38, 40, 68, 101] For others the performance issue is the reduction in the runtime (as measured by the elapsed time or wall clock) for a given problem [8, 31, 39, 40, 44, 91] or the running of the largest feasible problem on the available system [54, 55, 116]; These two differing views lead to the models of fixed size speedup and scaled speedup respectively.** As can be seen from just these few examples, there are differing views of this term performance. In several of the proposed models the qualities being measured are implicit, in that there is not ....

....the sequential portion of any algorithm s computation is difficult. Amdahl [8] saw this serial portion as part of the inevitable housekeeping ; others [39, 70, 116, 126] have seen it as an inescapable constant overhead or some function of the number of processors in the system. **Gustafson viewed [54] it as a function of both the number of processors and the ensemble size the granularity of the executed problem.** The observation [8, 51, 55] that most algorithms have some inherently sequential portion, that does not yield to parallelisation, appears to be perfectly reasonable. This is ....

[Article contains additional citation context not shown here]

John L. Gustafson. *The consequences of fixed time performance measurement*. In Scriver [110].

Isoefficiency Function: A Scalability Metric for Parallel.. - Ananth Grama (1993) (10 citations) (Correct)

.... **of a parallel computer for a given algorithm What is the best algorithm and architecture for solving a problem as the problem size and number of processors change A number of performance evaluation metrics have been developed to study the scalability of parallel algorithms and architectures [3, 4, 10, 11, 12].** Kumar and Gupta [7] provide a comprehensive survey of different methods of scalability analysis. The isoefficiency function is one such metric. It relates the size of the problem being solved to the number of processors required to maintain the efficiency at a fixed value. An important feature ....

....used be d dimensional (i:e: p = 2 d) and let n = 2 r . **An interesting property of the mapping shown in Figure 5 is that the vector elements residing on different processors are combined during the first d**

iterations, while the pairs of elements combined during the X[0] X[1] X[2] X[3] X[4] X[5] X[6] X[7] X[8] X[9] X[10] X[11] X[12] X[13] X[14] X[15] P 3 P 2 P 1 P 0 Y[0] Y[1] Y[2] Y[3] Y[4] Y[5] Y[6] Y[7] Y[8] Y[9] Y[10] Y[11] Y[12] Y[13] Y[14] Y[15] m = 0 m = 1 m = 2 m = 3 Figure 5: A 16 point FFT on four processors. P i denotes processor number i and m refers to the ....

[Article contains additional citation context not shown here]

John L. Gustafson. *The consequences of fixed time performance measurement*. In Proceedings of the 25th Hawaii International Conference on System Sciences: Volume III, pages 113–124, 1992.

Program Speedup in a Heterogeneous Computing Network - Donaldson, Berman, Paturi (1994) (10 citations) (Correct)

....bound for the speedup, and show that there is no theoretical upper limit on heterogeneous speedup. 1 Introduction Program speedup is a widely used measure of the performance of an algorithm on a multiprocessor or multicomputer. **Although there are differing notions of the definition of speedup [7], speedup measurements are still almost universally quoted as proof of system efficiency.** A common definition of speedup is that if machine M 1 can solve problem P in time T 1 , and machine M 2 solves the same problem in time T 2 , then the speedup S P of machine M 2 over machine M 1 on P is the ....

....M 2 achieves linear speedup over machine M 1 , whereas if S P m, the speedup This research was supported in part by NSF Grants ASC 9106465 and ASC 9301788. is sublinear. **Superlinear** speedup, where S P m, is especially interesting and somewhat controversial. **Quinn [15] and Gustafson [7] discuss arguments for and against the possibility of superlinear speedup.** A heterogeneous network is one in which multiple, possibly dissimilar, machines cooperate in solving a problem. **The** intuitive advantage of a heterogeneous network is the ability to match segments of code with machines in a ....

Gustafson, J.L. *The consequences of fixed time performance measurement*. Proc. 25th Hawaii International Conference on System Sciences. Jan. 1992, pp. 113–124.

Parametric Micro-level Performance Models for Parallel Computing - Youngtae Kim (1994) (1 citation) (Correct)

....The papers [19, 3] discuss shortcomings of earlier theoretical research, and propose new models called BSP and LogP for parallel computation. **An** important aspect of both models is the incorporation of communication parameters which were ignored in earlier theoretical research. **The studies [2, 7, 8, 18] address several pragmatic issues and provide insights into important attributes of parallel performance.** A good introduction to performance and scalability of parallel systems is provided in recent books [10, 12] This paper is about parametric micro level (PM) performance models for parallel ....

....which incorporates precise details of interprocessor communication, memory operations, miscellaneous overheads due to auxiliary instructions, and effects of communication and computation schedules. **Execution times can be predicted by fitting timing curves to experimental data, as discussed in [8].** The basic approach is to determine an algebraic expression for the fitting formula by analysis of algorithm and then determine the coefficients by experiments. **This** approach is closely aligned with our goals; it can accurately predict execution times. **A** fitting formula expresses execution time ....

[Article contains additional citation context not shown here]

Gustafson, J. L. *The Consequences of Fixed Time Performance Measurement*. Proc. Twenty-fifth Hawaii Internat. Conf. System Sciences Vol.3. 1992, pp. 113124.

Scheduling From the Perspective of the Application - Berman, Wolski (1996) (49 citations) (Correct)

....trade off the time required to skim distributed data to make it local with the time required for data access from remote locations. **In** general, performance criteria vary with the user and the application. **Most users employ common criteria such as execution time, speedup (fixed size or fixed time [12]) cost of execution cycles, etc.** although performance goals vary considerably over metacomputing applications. **Moreover**, distinct users will attempt to optimize their usage of same metacomputing resources for different performance criteria at the same time. **For** individual applications, the ....

GUSTAFSON, J. *The consequences of fixed time performance measurement*. Proceedings of the 25th Hawaii International Conference on System Sciences (Jan 1992), 113–124.

Knowledge Of Characteristics In Multiprogrammed Multiprocessor.. - Parsons (1997) (Correct)

....resulting in better speedup. **In** order to provide a fairer comparison, Gustafson proposed sizeup as the ratio of the size of problem that can be solved on a parallel computer to that on a uniprocessor within a fixed amount of time. **This sizeup metric led to the development of the SLALOM benchmark [Gus92] A more recent scalability metric involves determining the rate at which a problem size must increase in order to maintain a certain level of efficiency as the number of processors is increased.** The 2. **BACKGROUND** 38 function that characterizes the problem size increase is called the ....

John L. Gustafson. *The consequences of fixed time performance measurement.* In Proceedings of the 25th Hawaii Conference on System Sciences, volume III, pages 113– 124, 1992.

A Parallel Workload Model and Its Implications for Processor.. - Allen Downey (1996) (41 citations) (Correct)

....function of the problem size. **Larger** problems generally have more available parallelism. **ffl** Users often submit jobs with problem size and cluster size chosen such that the turnaround time is less than some constant time limit. **Thus, the cluster size and the problem size tend to increase together [6].** ffl In the aggregate, we expect the shape of the distribution of chosen cluster sizes to reflect the shape of the distribution of average parallelism. **Figure** 4 shows the distribution of cluster sizes for the workloads from SDSC and CTC. **In** both cases, almost all jobs have cluster sizes that are ....

John L. Gustafson. *The consequences of fixed time performance measurement.* In Proceedings of the Twenty-Fifth Hawaii International Conference on system Sciences, Vol. III, January 1992.

Performance Properties of Large Scale Parallel Systems - A. Gupta, et al. (1993) (13 citations) (Correct)

....to thousands of processors are commercially available today and offer substantially higher raw computing power than the fastest sequential supercomputers. **Availability of such systems has fueled interest in investigating the performance of parallel computers containing a large number of processors [23, 8, 7, 27, 37, 30, 6, 33, 18, 32, 17, 38, 34, 4, 5, 29].** The performance of a parallel algorithm cannot be studied in isolation from the parallel architecture it is implemented on. **For** the purpose of performance evaluation we define a parallel system as a combination of a parallel algorithm and a parallel architecture on which it is implemented. ....

John L. Gustafson. *The consequences of fixed time performance measurement.* In Proceedings of the 25th Hawaii International Conference on System Sciences: Volume III, pages 113–124, 1992.

NetPIPE: A Network Protocol Independent Performance Evaluator - Quinn Snell Armin (1996) (12 citations) **Self-citation (Gustafson)** (Correct)

....the transfer block size k from a single byte until transmission time exceeds 1 second. **Hence,** NetPIPE is a variable time benchmark and will scale to all network speeds. **Unlike fixed size benchmark tests, NetPIPE will not become outdated and inaccurate as technology advances (see Gustafson [6]) To increase the universality of NetPIPE, information is measured in bits rather than bytes.** The definition of byte varies more than one might think. **For** each block size c, three measurements are taken: c Gamma p bytes, c bytes, and c p bytes, where p is a perturbation factor with a default ....

Gustafson, J. "*The Consequences of Fixed Time Performance Measurement*", Proceedings of the 25th Annual Hawaii International Conference on Systems Sciences, IEEE Computer Society Press, Vol 3, pages 113-124.

Multiprocessor Scalability Predictions Through Detailed.. - Xiaodong Zhang (Correct)

No context found.

J. L. Gustafson, "*The consequences of fixed time performance measurement*", Proceedings of the 25th Hawaii International Conference on System Sciences. Vol. III, 1992, pp. 113-124.